a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl group present in said high secondary polyether polyols, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

a polyisocyanate;

a chain extender; and

a polyurethane catalyst,

and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

3. The thermoplastic polyurethane according to claim 1, wherein said polyol component has a number average molecular weight of from about 800 to about 1,500, and wherein said polyol component has a hydroxyl functionality of from about 1.8 to about 2.2.

16. A polyurethane composition, comprising:

a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl groups present in said high secondary polyether polyol, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

a polyisocyanate;

a chain extender; and

a polyurethane catalyst,

said polyurethane being a thermoplastic substantially free of cross-links,

and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

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18. The polyurethane composition according to claim 16, wherein said polyol component has a number average molecular weight of from about 800 to about 1,500, and wherein said polyol component has hydroxyl functionality of from about 1.8 to about 2.2.

31. A process for preparing a thermoplastic polyurethane composition, comprising:

reacting in substantially a single step a composition comprising:

a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl group present in said polyether polyol, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

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a polyisocyanate;

a chain extender; and

a polyurethane catalyst,

wherein said thermoplastic polyurethane is substantially linear, and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

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33. The process for preparing a thermoplastic polyurethane composition according to claim 31, wherein said polyol component has a number average molecular weight of from about 800 to about 1,500, and wherein said polyol component has hydroxyl functionality of from about 1.8 to about 2.2.

40. The process for preparing a thermoplastic polyurethane composition according to claim 39, wherein said polyol component includes less than or equal to 15 weight percent of said polyol having low secondary hydroxyl content, and wherein said polyurethane catalyst is present in an amount from about 20 to about 500 parts by weight per million parts by weight of the total weight of said polyisocyanate, said polyol component, and said chain extender.

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